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| 10/774,917 | 02/06/2004 | Peter C. Zahrobsky | 200401024-1 | 8858 |

22879 7590 06/14/2007
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| EXAMINER |
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SHEWAREGED, BETELHEM

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| ART UNIT | PAPER NUMBER |
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1774

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06/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/774,917 | Applicant(s) ZAHROBSKY ET AL. | |
| | Examiner Betelhem Shewareged | Art Unit 1774 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 25-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 31-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-23 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's response filed on 03/19/2007 has been fully considered. Claim 24 is canceled, and claims 1-23 and 25-47 are pending. (NOTE: Claims 1-13 and 31-47 are withdrawn from consideration as non-elected invention).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14-23 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohbayashi et al. (US 6,492,005 B1) in view of Schliesman et al. (US 6,129,785) and Koyano et al. (US 2003/0064206 A1).

4. Ohbayashi discloses an ink jet recording sheet comprising a support and at least one ink absorptive layer provided on the support (abstract). The recording layer comprises a binder and inorganic particles (col. 13, line 33). The recording layer further comprises a hardener such as boric acid (col. 15, line 51), and a pH adjustor such as potassium carbonate (col. 16, line 30). The potassium carbonate is a weak base and it is equivalent to the claimed alkali metal salt, and when it reacts with the boric acid, bubbles having the claimed diameter are inherently generated in the ink absorptive layer.

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5. Ohbayashi does not teach that the ink absorptive layer has the claimed pH value. At the time of the invention, it would have been obvious to a person ordinary skill in the art to maintain the pH value of the ink absorptive layer within the claimed range in order to control the stability and the viscosity of the composition that would form the recording layer (see col. 2, line 58 thru col. 3, line 4 of Schliesman). Furthermore, it would have been obvious to a person of ordinary skill in the art to adjust the amount of the potassium carbonate so as to control the pH value of the layer.

6. With respect to claim 21, the use of lithium containing pH adjusting agent such as lithium carbonate is well known in the ink jet recording art before the claimed invention. See [0157] of Koyano.

7. With respect to the thickness of the ink receiving layer, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the thickness of the ink receiving layer in order to optimize the flexibility of the recording medium and ink-absorbing properties of the layer. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

8. NOTE: In the reference of Ohbayashi, a high pressure homogenizer was only used during preparation of particle dispersion. The high pressure homogenizer was never used during preparation of ink absorptive layer.

Response to Arguments

9. Applicant's argument is based on that the alkali metal present in the ink-receiving layer at from about 0.4 wt% to about 10 wt% has not been shown. This argument is not persuasive because the examiner has shown that it would have been obvious to a person of ordinary skill in the art to adjust the amount of the potassium carbonate in order to control the pH value of the layer.

10. Applicant argued that the gas generated bubbles located within the ink-receiving layer has not been shown. This argument is not persuasive because Ohbayashi teaches the claimed acid and weak base that it appears to generate gas bubbles in the layer.

11. Applicant argued that the lithium hydroxide of Koyano. This argument is not persuasive because the examiner did not combine the lithium hydroxide of Koyano. However, the Examiner used the reference of Koyano to teach the use of lithium carbonate that is a weak base, which may be used to change a highly acidic pH to less acidic pH or basic pH.

12. Applicant also argued that the boric acid is used as a crosslinker and the potassium carbonate is used as a pH adjuster, thus the boric acid and the potassium carbonate would not generate gas bubbles. This argument is not persuasive because since the boric acid and the potassium carbonate are substantially identical to Applicant's acid and weak base the gas bubbles would be generated in the layer.

13. For the above reason claims 14-23 and 25-30 stand rejected.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is 571-272-1529. The examiner can normally be reached on Mon.-Fri. 8:00AM-4:30PM.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B.S.
December 8, 2006.


BETELHEM SHEWAREGED
PRIMARY EXAMINER